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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/909,691	07/20/2001	Ping Gao	28341/00222.US1	9971

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EXAMINER	
CHANNAVAJJALA, LAKSHMI SARADA	

ART UNIT	PAPER NUMBER
1615	

DATE MAILED: 10/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/909,691	GAO ET AL.	
	Examiner	Art Unit	
	Lakshmi S. Channavajjala	1615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,8-12,14-17,19,20 and 25-40* is/are pending in the application.

4a) Of the above claim(s) *28-36 and 38-40* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 6-20, 25-27 and 37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Reciept of amendment and remarks dated 8-10-06 is acknowledged.

Claims 1-3, 8-12, 14-17, 19-20 and 25-40 are pending in the instant application.

Claims 28-36 and 38-40 have been withdrawn as being non-elected.

The following rejection of record has been maintained:

Claim Rejections - 35 USC § 103

Claims 1-3, 6-20, 25-27 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 96/03113 (WO) in view of US 2002/0102301 to Schwarz and US 6,221,391 to Rouffer.

Instant claims are directed to a self-emulsifying drug delivery (SEDD) system comprising an extremely water-insoluble lipophilic active agent, a fatty aid, a surfactant and polyvinylpyrrolidone (PVP), wherein the molecular weight of PVP is about 2,500 to about 20,000 and the weight ratio of fatty acid to PVP is 2:1 to 1:3. Dependent claims further limit the ratio of surfactant to PVP; recite specific surfactants, fatty acids, active agents etc.

WO '113 teaches a SEDD system for increasing bioavailability of water insoluble or oil soluble drugs, comprising the 0.1% t 17% drug, 2% to 50% of a solubilizer, 10% to 55% of an emulsifier and oil (claim 1 and pages 6-7, page 8, lines 14-24). Particularly, WO '113 teaches the claimed emulsifiers (page 7) and their solubilizers include fatty acids such as oleic acid, linoeic acid (lines bridging pages 7-8). The percentages of drug, solubilizer and surfactant taught by WO are within the claimed range. Further, WO also teaches the claimed surfactants such as polyoxyethylene glycerides (page 7). WO'

113 teaches oral administration of the composition in the form of gelatin capsules (page 8, lines 25-28). WO does not teach PVP of the instant claims and also fails to teach specific drugs of claim 20. However, WO suggests that the composition can be used with any active agents such as protease inhibitors or other active agents (page 10). WO further teaches addition of antioxidants such as BHA, ascorbic acid etc.

Schwarz teaches pharmaceutical self-emulsifying composition for delivering biologically active agents or hydrophobic drugs that have low solubility and increasing the sustained release of the drug by incorporating a water-swellable polymer into the composition. The composition of Schwarz comprises drugs or active agents such as coenzyme Q10, indomethacin, vitamins etc (examples), oils, fatty acid esters, mono and diglyceride, fatty acids etc (0010, 0018). Schwarz teaches addition of surfactants such as sorbitan derivatives, PEG stearate, PEG-glycerides etc (0011). Among the water-swellable polymers, Schwarz teaches cellulose derivatives, acrylic polymers, polyvinylpyrrolidone, gums etc (0021). Examples (tables 1-7) of Schwarz particularly recite PVP K-25, which is also described as one of the suitable polymers in the instant application. The examples of Schwarz recite PVP in concentrations less than the percentages claimed in the instant.

Rouffer teaches self-emulsifying compositions in soft-gelating capsules, for hydrophobic drugs such as ibuprofen, comprising a polyoxyethylene derivative of castor oil as a solubilizer or emulsifier, castor oil and a polyvinyl pyrrolidone (examples). Rouffer teaches that PVP is a complexing agent that prevents re-crystallization of the drug (ibuprofen). Rouffer teaches employing PVP in the molecular weight range of 2000

to 1,500,000 daltons, having both low and high molecular weight (2000-3000, referred to as K-12 and7000-11, 000, referred to as K-17), and in an amount of 15% to 20% (col. 3, lines 1-20), which is within the claimed range.

Accordingly, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention to add PVP having a molecular weight between 2000 and 1,500,000, in the self-emulsifying drug delivery system of WO for complexing, stabilizing and aiding in the sustained release of a hydrophobic drug because Schwarz teaches that PVP is water-swellable that forms a gel, upon dissolution of which the emulsified drug is released at a regulated rate and Rouffer suggests that PVP complexes with insoluble drugs and prevents their re-crystallization. Therefore, one of an ordinary skill in the art would have reasonably expected to control the release rate of a hydrophobic as well as prevent its re-crystallization in the self-emulsifying system of WO. While the references fail to specify the claimed ratios of surfactants with PVP, the examples of Schwarz and Rouffer recite the amounts of PVP and surfactants that fall within the claimed ratios. Absent any evidence of unexpected results with the claimed ratios, optimizing the amounts of PVP and fatty acids depending on the drug, dosage form and other parameters, so as to achieve a self-emulsifying composition that is stable would have been within the scope of a skilled artisan. Claim 37 recites "for parenteral", which is an intended use and accordingly carries no patentable distinction.

Response to Arguments

Applicant's arguments filed 8-10-06 have been fully considered but they are not persuasive.

Applicants admit that Schwarz describes solid pharmaceutical SEDD compositions comprising a lipid phase, a surfactant system, a delivery control component such as hydroxypropylmethylcellulose, hydroxyethylcellulose, hydroxypropyl cellulose, carboxymethylcellulose, polyacrylic acid, polyethylene oxide, PVP, or a natural gum or polysaccharide, and excipients for tablet formation. However, they argue Schwarz does not mention a preferred molecular weight range of the PVP and that in every example comprising PVP, Schwarz uses a PVP K-25 (Examples 1-3 and 5-7) or PVP K-90 (Example 4) with molecular weights of 25,000 and 1200000 respectively. It is argued that Schwarz describes compositions having less than 10% by weight of active ingredient (see Examples 1-7). With respect to Rouffer, applicants argue that the reference describes SEDD compositions comprising ibuprofen; these compositions may further comprise PVP K-12 (2000-3000 Daltons) or PVP K-17 (7000-11000 Daltons) and contrary to the Office's suggestion, Rouffer does not suggest that PVP having a molecular weight in the range of 2000 to 1,500,000 Daltons would be suitable in his compositions and that very large weight range referred merely to all known PVP. It is argued that Rouffer specifically restricts his invention to two lower weight PVPs, PVP K-12 (molecular weight approximately 2000-3000 Daltons) and PVP K-17 (molecular weight approximately 7000-11,000 Daltons). Applicants state that one of ordinary skill in the art would not have been motivated to combine the teachings of WO '113, Rouffer, and Schwarz because Schwarz teaches the use of high molecular weight PVP, while Rouffer teaches the use of low molecular weight PVP.

Applicants' arguments are not persuasive because all the three references cited in the rejection are directed to self-emulsifying drug delivery systems thus constituting analogous art. Further, the use of PVP over a broad range of molecular weights is known for self-emulsifying drug delivery systems, as evidenced by the teachings of Schwarz and Rouffer. The broad ranges of molecular weights described by the cited references include the claimed molecular weight ranges (high and low). Therefore, it would have been obvious for one of an ordinary skill in the art at the time of the instant invention was made to employ PVP of high or low molecular weight as a stabilizing aid in the sustained release of a hydrophobic drug because Schwarz teaches that PVP is water-swellable that forms a gel, upon dissolution of which the emulsified drug is released at a regulated rate and Rouffer suggests that PVP complexes with insoluble drugs and prevents their re-crystallization.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lakshmi S. Channavajjala whose telephone number is 571-272-0591. The examiner can normally be reached on 9.00 AM -6.30 PM

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Woodward can be reached on 571-272-8373. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Lakshmi S Channavajjala
Primary Examiner
Art Unit 1615

October 18, 2006